

## ABSTRACT OF THE DISCLOSURE

Apparatus and methods for the generation of water in a direct oxidation fuel cell. Water, in addition to carbon dioxide and heat, is produced when carbonaceous fuel or fuel solution is oxidized in the presence of air and a suitable catalyst. This oxidation re-  
5 action is performed on a surface that allows for the introduction of oxygen in the presence of a catalyst. Water produced can then be directly added to the fuel solution thereby diluting the fuel solution to a desired concentration, or may be separately and then later added to fuel solution for the normal fuel cell operations depending on the permeability of the membrane to water.